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Crew-integration and Automation Testbed (CAT) Program Overview and RUX06 Introduction

26-27 July 2006

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Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 20 SEP 2006		2. REPORT TYPE N/A		3. DATES COVERED	
4. TITLE AND SUBTITLE Crew-integration and Automation Testbed (CAT)Program Overview and RUX06 Introduction				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) ; ; Nunez /PatrickTierney /TerryNovak /BrianMcDowell /Kaleb				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) REDCOM - TARDEC 6501 E 11 Mile Rd Warren, MI 48397-5008				8. PERFORMING ORGANIZATION REPORT NUMBER 16335 RC	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 6	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



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Problem Statement

- Future combat systems must be reduced in size and weight
- Network-centric warfare introduces large amounts of information into combat vehicles
- Unmanned assets on future battlefield must be controlled / supervised by Soldiers



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Technical Approach

- Multi-mission crew stations that provide the capability to perform fight, scout, and carrier missions
- Unmanned asset control for UGVs, UAVs, and UGSs
- Autonomous Navigation System for MGCV
- Crew Aiding Behaviors for assistance with manned and unmanned mission planning and execution
- Embedded simulation system for in-vehicle mission rehearsal, mission planning, and embedded training
- Advanced warfighter interfaces for efficient multi-task execution

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RUX06 Experiment

- Capstone CAT experiment
 - Evaluate effectiveness of CAT program in improving the performance and/or reducing the workload for a mounted Soldier through the use of automated software tools and the integration of autonomous mobility systems on the manned platform
- Four Army S&T Programs
 - Crew-integration and Automation Testbed (CAT)
 - Robotic Follower (RF)
 - Fire Control Node Engagement Technologies (FC-NET)
 - Robotics Collaboration (RC)



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RUX06 Experiment List

- X1 - "Mission Planning"
- X2 - "Autonomous Mobility and Planning while Driving"
- X3 - "Re-planning on the move"
- X4 - "Target Engagement"
- X5 - "Supplementary Experiments"
 - X5-LAA - "Local Area Awareness"
 - X5-HRI - "Human-Robotic Interaction"
- X6 - "Platoon Leader"
- FXP - Motion Sim Lab Pilot of X2 (with eye tracker)



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CAT Program Contributors



GENERAL DYNAMICS
Robotic Systems

GENERAL DYNAMICS
Land Systems



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